

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/010508

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> C22C5/06, C23C14/34

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> C22C5/06, C23C14/34

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2004  
Kokai Jitsuyo Shinan Koho 1971-2004 Toroku Jitsuyo Shinan Koho 1994-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2002-332568 A (Ishifuku Metal Industry Co., Ltd.),	1-9, 10,
Y	22 November, 2002 (22.11.02), Claims 2, 4; Par. Nos. [0001], [0002], [0010], [0015], [0023] (Family: none)	11-15, 21, 22 16-17, 18, 19, 20, 23, 24, 25
Y	JP 2001-324713 A (Hitachi, Ltd.), 22 November, 2001 (22.11.01), Claim 1; Par. No. [0032] & US 2001-40658 A1	16, 19
Y	JP 9-183181 A (Toppan Printing Co., Ltd.), 15 July, 1997 (15.07.97), Par. Nos. [0111] to [0114] & EP 733931 A2 & US 5667853 A1	17

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance  
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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
"&" document member of the same patent family

Date of the actual completion of the international search  
15 November, 2004 (15.11.04)

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30 November, 2004 (30.11.04)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

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PCT/JP2004/010508

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 11-260269 A (Omron Corp.), 24 September, 1999 (24.09.99), Par. Nos. [0003], [0015] (Family: none)	18
Y	JP 2002-350840 A (Hitachi, Ltd.), 04 December, 2002 (04.12.02), Par. Nos. [0004] to [0005], [0036] & US 2002-176039 A1	20
Y	JP 2003-208801 A (Hitachi, Ltd.), 25 July, 2003 (25.07.03), Claim 24; Par. No. [0084] & US 2003-86271 A1	23
Y	JP 10-282907 A (Toppan Printing Co., Ltd.), 23 October, 1998 (23.10.98), Claim 1; Par. No. [0054] (Family: none)	24, 25
Y	JP 5-341066 A (Dowa Mining Co., Ltd.), 24 December, 1993 (24.12.93), Claim 4 (Family: none)	25